DOCUMENT RESUME

ED 043 186 EC 030 244

AUTHOR	Tymchuk, Alexander J.
TITLE	A Description and Preliminary Results of a Token Economy with Mildly and Moderately Retarded Adolescent Boys. IMRID Papers and Reports, Volume VII, No. 2.
INSTITUTION	George Peabody Coll. for Teachers, Nashville, Tenn. Inst. on Mental Retardation and Intellectual Development.
SPONS AGENCY	National Inst. of Child Health and Human Development (NIH), Bethesda, Md.
PUB DATE	70
NOTE	63p.
EDRS PRICE	EDRS Price MF-$0.50 HC-$3.25
DESCRIPTORS	Adolescents, *Behavior Change, *Educable Mentally Handicapped, *Exceptional Child Research, Operant Conditioning, *Positive Reinforcement, Rewards, *Trainable Mentally Handicapped
IDENTIFIERS	Token Economy

ABSTRACT

Twenty mildly and moderately retarded boys (age 12 to 18 years) participated in a behavior modification program in which adaptive behavior was rewarded through tokens or privileges, while maladaptive behavior was controlled through the use of fines and removal from the situation. The preliminary results (based on four months of operation) showed the token economy methods to be effective with this population, although a rapid loss of acquired good behavior during holidays raised questions regarding the durability of such results. A description of the methods, subjects' characteristics, and behavior patterns is included with the preliminary report. (RD)

IMRID

INSTITUTE ON MENTAL RETARDATION AND INTELLECTUAL DEVELOPMENT

A UNIT OF THE

John F. Kennedy Center for Research on Education and Human Development

GEORGE PEABODY COLLEGE FOR TEACHERS/NASHVILLE, TENNESSEE 37203

ED043186

A Description and Preliminary Results of A Token Economy with Mildly and Moderately Retarded Adolescent Boys

by

Alexander J. Tymchuk

Clover Bottom Hospital and School

and

George Peabody College

Volume VII Number 2

1970

EC030244

EC030244

ED043186

A Description and Preliminary Results of A Token Economy with Mildly and Moderately Retarded Adolescent Boys

by

Alexander J. Tymchuk

Clover Bottom Hospital and School

and

George Peabody College

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

A Description and Preliminary Results of A Token Economy with Mildly and Moderately Retarded Adolescent Boys

by

Alexander J. Tymchuk

Clover Bottom Hospital and School
and
George Peabody College

ABSTRACT

The use of operant methods to accelerate desirable behavior and to decelerate undesirable behavior in severely and profoundly retarded individuals has been successful, especially when used with relatively simple and isolable behavior in controlled institutional settings. In the present demonstration, the use of operant procedures was extended to more complex social behavior among mildly and moderately retarded adolescent boys. These techniques were subsumed within a token economy. Preliminary data indicate that such a situation has some efficacy in the training of such individuals.

A Description and Preliminary Results of A Token Economy with Mildly and Moderately Retarded Adolescent Boys[1]

by

Alexander J. Tymchuk[2]

Clover Bottom Hospital and School
and
George Peabody College

Introduction

Although the use of operant techniques has blossomed in the past decade, and results with animals have been replicated with human subjects, surprisingly few results have been reported aside from the data on isolated individual cases or single behavioral components. Patterson, Jones, Whittier, and Wright (1965) and Patterson and Brodsky (1966) reported on the success of operant techniques in controlling problem behavior in one child. Atthowe and Krasner (1968) reported

---

[1] This project is supported by the Institute on Mental Retardation and Intellectual Development at George Peabody College through grant (HD-00973) from the National Institutes of Child Health and Human Development, and by Clover Bottom Hospital and School. The author wishes to thank Dr. H. Carl Haywood, Director of the Institute on Mental Retardation and Intellectual Development for his continuing consultative support, as well as Dr. Ronald Thiele, Superintendent; Dr. Catherine Terrell, Director of Human Development; Mr. Jim Jenkins, Director of Progress House and his associate, Mrs. V. Jenkins; Mrs. Preston Pearson, Director of Nursing Services; for their invaluable support at first, for the establishment and later, in the continuation of the program. Finally, the program would not have succeeded and continued to succeed if it were not for the energetic response of the aides: Mrs. Amos, Mrs. Boner, Mrs. Daniels, Mrs. George, Mrs. Hailey, Mrs. Harrison, Mrs. O'Neil, Mrs. Sawyers, Mrs. Shrum, Mrs. Taylor, and Mrs. Thompson.

[2] Research Psychologist and Director of Token Economy Program at Clover Bottom. Currently completing doctorate in psychology at Peabody.

on the control of single behavioral units in a group of disturbed adults. Others (Ball, 1969; Roberts & Perry, 1970) have described programs, but without report of results. Still others (Musick & Luckey, 1970) have reported limited anecdotal data.

Most of the above studies have offered a full description of their methods and programs, which seems to be the chief concern of their reporting. The establishment of token economies is particularly well reported, but more data are necessary on the efficacy of such programs when used with differing populations. Success in controlling problem behavior of a single child with the backing of a large grant and a number of resource persons may be beneficial, but is hardly economical or generalizable. Similarly, the control of some simple behavior in a group, members of which are multi-problematic, after several years of concerted effort, is important and necessary as a preliminary step, but is again hardly economical. It is necessary to place controls over the entire day-to-day functioning of groups of retarded and/or disturbed persons to determine the efficacy of using operant techniques within token economies.

We have been building up to this goal, yet few results have been reported. The complexity of such a task is enormous since such programs must necessarily be established in already existing institutional settings. Structural changes must be made, aides trained and supervised, residents selected, and cooperation established between units within the institution. Each of these tasks is in itself formidable. Without any one of them, a token economy becomes less comprehensive and probably less efficient. The important task is to make certain that

operant methods are followed closely. Given the nature of the program, operant methods are followed very loosely in many programs.

Some positive results have been reported with the type of child used in the present program. Burchard (1967), Phillips (1968), Ray (1968) and Shelton (1968) reported such success with delinquent adolescent boys while Werry, McQueen, Kuypers, and Evans (1969) reported negative results. The latter authors consider their relative failure to be due to the type of child. It may well be that operant methods may not be efficacious with this type of child within a token economy. Perhaps they need a concentrated effort to control their gross antisocial behaviors first. The Werry et al. (1969) study was also wrought with other difficulties.

Where data have been reported, these data are largely on single behaviors of single subjects. It would seem more appropriate now that we have reached a certain level of sophistication in our use of operant methods, to also attain a higher level of reporting operant results. This goal could be reached partly by the reporting of group results. Such reporting is necessary if we are going to disseminate the results of token programs encompassing more than a few subjects. Such grouping of data may "wash out" individual idiosyncracies in behavioral management, but a few illustrative case studies along with the grouped data would suffice in allowing some generalizations to be made. The present study reports on the efficacy of a token economy with institutionalized mildly retarded adolescent boys, and on the ease with which such a

program could be established and continued within the confines of an institution. The use of operant techniques in the form of a token economy with mildly retarded adolescents seems inherently of great value since these children have a maximal opportunity to become properly functioning citizens of our communities once the behavior for which they were institutionalized is modified and new and more adaptive behavior established, and before the isolationism and other maladaptive behavior of institution living has had an opportunity to become a part of the behavioral and emotional repertoires of these children.

Operant Methods

Operant methods were derived from the laboratory of B. F. Skinner (1937) who observed that animals would respond longer and more quickly if rewarded and would stop responding if punished. These principles were also found to be generalizable to human subjects which were particularly helpful in the establishment of previously nonexistant behavior (Ferster & DeMyer, 1961). The applicability of these principles was furthered when they were used with hospitalized severely disturbed subjects in the form of token economies (Ayllon & Azrin, 1968).

Within the present program, reward is emphasized. All adaptive behavior is rewarded either through tokens or privileges. Maladaptive behavior is controlled by removal of the child from the situation so that his behavior cannot be reinforced by his peers and through the use of fines and prices. If the child acts out, he obviously cannot earn tokens with which to buy rewards and he may be fined (tokens removed) in addition. In this way the subject becomes responsible for his own be-

havior. In the past, all behavior both maladaptive and adaptive, received essentially the same treatment with irregular and infrequent punishment and rewards.

The Beginning

After careful study of the descriptions of existing token economies, the program was begun in an already established framework in which 17 mildly retarded adolescent boys ranging in age from 12 to 18 years lived. This was a three-wing single story building; the other two wings separately housed mildly retarded males and females. The building housed the highest functioning residents in the institution. Each resident shared a room with another boy. The bedrooms contained two beds, dressers and desks, a closet, and a separate bathroom containing a single toilet and shower. There was a large window without metal screens in each room. At the beginning of the program, changes were made in the ward's physical construction. A dining area was constructed just off the ward adjoining a kitchen from which meals would be given the boys during the program. Food for meals was prepared in the main dining room and brought to the building. Here, meals were laid out by the boys. On the ward proper, one room was assigned to be a time-out room. A large punching bag was hung in one corner. Wire screening was placed on the windows and on the door vent. Another room became the canteen; another, the teacher aides' room where all records and tokens were kept (a blackboard and bulletin board were built for ease of communication); another, a classroom where telephones, blackboard, tape recorder, clock, books, and pictures were kept for training in

the evening by one teacher aide; and another remained the television room. A large bulletin board was placed in the corridor for display of jobs and pictures.

Aides

There were nine aides in all (one joined later): 3 for the morning, 4 for the afternoon, and 2 for the night shifts. They worked a 5-day week with days off in rotation. There were usually 2, 2, and 1 for the shifts on duty at all times. If one aide was sick, no replacement was available because of the limited numbers of aides in the entire building. In fact, one aide was used as a charge aide for the entire building and could not devote much time to the program. The short supply of aides was further complicated by the "pulling" of these aides to other buildings. This was stopped shortly after the program began. The lack of adequate help has still not been reconciled and has become more evident because the aides are spending more of their time observing, recording, and supervising and improvising, where before their sole purpose was to control the children. This may serve to point out the use of aides as teachers and supervisors rather than as custodians. These former roles are being followed here. All aides wore everyday clothes and not uniforms.

Although the "pulling" of program aides to other buildings has stopped, there remains the need for the use of these aides on the other two wings of the building. Program aides are sometimes the only ones in the building and must forego working within the program for the benefit of a larger population. In addition, throughout the months of the program's existence at least one aide (at present two aides) has

been in the regular aide training class sponsored by the institution. Replacement aides are sometimes found, but even then, none are committed to the program when they are within it so short a time. They also offer some corrosion of innovation when they espouse the old institutional line of running a tight unrocking ship.

The difficulty of aide attendance then must be reconciled. Aides who remain on the ward, rightfully indicate their frustration, but still offer their utmost. It is important, however, to realize that the success of any program within an institution is almost wholly dependent upon those who are directly involved in carrying out the program's aims -- the aides. If the aides are willing to support, they should also be supported.

Training

Ball (1969) suggested that training of the teacher aides need not be so detailed as to extend over several months, and noted that perhaps a more profitable method would be to give the aides a minimum of formal instruction and allow them to learn as they worked. This strategy was followed here primarily because the aides could not be removed from the ward for any extended time. They were consequently taught basic operant techniques with a minimum of formal language, and were instructed on how to observe and record behavior. This was done each day during the time when shifts overlapped and before the program began. Readings were assigned from Bensberg (1965), Scheerenberger (1969), Larsen and Bricker (1968), with copies given to each aide. On subsequent days and weeks, questions were raised, discussed, and answered.

Nine aides were involved in total, and each was trained to record and analyze behavior.

Rating Scales and Recording

Five rating scales were composed and kept. The first was a rating scale of seven items on which each boy was rated by three aides on different shifts two weeks before the program began and again four months after the program began. This first scale included items on initiative, attention span, eating skills, personal appearance, use of leisure time, peer interaction, and working skills and was scored from 1 (poor) to 5 (good). See Appendix A.

During the two-week baseline period, the aides recorded daily grooming habits, room cleanliness, meal behavior and ward behavior items. There were 100 response units observed and recorded on this scale. See Appendix B. In addition, a third scale included 15 typical behavioral problems seen on the ward previously, including items which could be classified as of an aggressive, destructive, emotional, disobedience, or sexual nature. See Appendix C. A fourth scale included items of adaptive behavior. This scale was discarded since it was seen to include many of the items which appeared in the second scale. A fifth scale was used for job performance, and consisted of 6 items on each of which each child was rated A, B, or C. See Appendix D. Each letter represented an increasing degree of functioning regarding job time arrival, amount of supervision, initiative, staff interaction, expenditure of effort, and productiveness. This scale was used only after the program began, and was completed either by the boy's on-campus employer (dining room, laundry, school aide, etc.) or by an aide whose job it was to work with five boys in a therapeutic work setting.

Subjects

The boys ranged from 12 to 18 years of age. Diagnostic classifications included were 15 cultural familials, 1 mongoloid, 1 psychotic, and 3 extreme behavior problems. Peabody Picture Vocabulary Test IQs for 10 boys ranged from 22 to 110 with a mean of 53.6 and Standord-Binet, Form LM IQs for the other 10 boys ranged from 26 to 78 with a mean of 46.2 All boys were toilet trained, but some lacked additional toilet skills, appropriate eating habits and socialization skills.

In the beginning 17 boys were present on the ward. Just before the programe began, however, 3 boys were transferred to another institution so that for the first month only 14 boys participated. After one month's operation, it was felt that more boys could be integrated up to a maximum of 20. Subsequently, after careful study of the residents of other buildings, 6 more boys were selected to participate. These were integrated into the program in pairs in bi-weekly intervals beginning 1 December. Each new pair roomed together and were essentially uncontrolled during a two-week baseline period.

Parents

Letters to parents were sent indicating the scope and plans of the program and requesting that they meet with the author if any questions needed answering. Parents accepted this invitation only after complaints from the boys after home visits. The majority of letters were returned to the author. All visits to the ward were controlled through the social worker, and were contingent on the boys, having enough tokens to pay for a visit.

Canteen

The canteen was stocked with materials which had been previously seen as being desired by the boys. Standard items such as cokes and candy bars were included, as well as special items such as records, a record player, radios, games, gloves, and socks. All previously-owned toys were confiscated from the boys and were rented back for certain prices. Gifts from parents were discouraged, but when they arrived, they were given the boys when a special reward seemed appropriate.

Program

The program was originated to determine the efficacy of operant methodologies within token economy in:

1. Controlling the problematic behaviors of institutionalized mildly retarded adolescent boys.
2. Establishing more adaptive behaviors in such boys.

Tokens

The program began with the use of a single-size token, actually a chromium-plated washer upon which each boy's initials were stamped to prevent stealing. Each boy had a ring on which he carried his tokens. After four months' operation, (2 March, 1970) during which each boy was required to learn to count, the single-size token was discarded for five sizes of tokens. These were roughly the equivalent in size to (and were exactly the equivalent in value to) the penny, nickel, dime, quarter, and half dollar. A paper dollar was also printed but this will not be used until the boys become fully facile with the coins. These tokens also were chromium-plated, and had each boy's initial as well as their value. All real money was confiscated and placed in

account for the boys. Gifts of money and pay from jobs were also placed in account. This money was drawn on to pay for rewards purchased by the boy to whom the money belonged.

Banking

A banking system came into effect immediately when the token economy began. Each boy was required to pay in cash (tokens) for his day's activities before he was allowed to bank. However, the tokens could be withdrawn at any time that the bank was open. A record book of deposits and withdrawals was kept in the canteen; a slip with the same information was kept by the boy. These slips often became prize possessions of the boys.

Interest was paid irregularly and in irregular amounts, but the boys valued this addition to their hoard. When this hoard became great, all were able to purchase shoes, slippers, or gloves depending upon the number and the value of the tokens for each boy. All boys also saved so that they could go home, visit their Big Brothers, go to the dance, etc. These were events for which some planning had to be made and the boys did plan.

Jobs

Each week the boys rotated through a series of jobs. A list of these jobs and their pay are contained in Table 1. There were three supervisory positions for the kitchen crew, ward crew, and for the television and canteen rooms. Each boy was paid provided the work was well done. Off ward jobs included working in the laundry and dining room primarily. All boys were assigned off ward jobs once the

Table 1

Ward Job Description and Pay*

TABLES	Must be cleaned, shake tablecloths, scrape dishes after meals. (Earns 1 token for every meal)
DISHES	Washed. (1 token per meal)
DRYING	Dried and put away. (1 token per meal)
LOUNGE	Chairs straightened and magazines set out. Floor mopped - dry during week and wet on Saturday. (1 token)
RAISE FLAG AND REMOVE TRASH	Wait until filled and take to can. (1 token per meal)
MOPS	Room and sink cleaned, mops washed. Use bleach occassionally under supervision. (1 token)
TV/ACTIVITY ROOMS	Windows dusted, floors mopped, chairs straightened, TV dusted. (1 token)
BATHROOMS IN TV/ACTIVITY ROOMS	Bowls brushed, sinks cleaned, use cleanser, floors washed, (some disinfectant) little deodorant sprayed, towels folded, clean towels every week. (1 token)
HALLS	Floors mopped or washed. (1 token)
CHARGE RESIDENTS	Are paid if others do jobs. Kitchen crew and ward crew are supervised by each. (3 tokens)
STEPS	Steps on ward broomed, and from lounge; fountain cleaned with cleanser. (1 token)

*Each boy stays at a job for a week and then is reassigned.

program began. Five boys were supervised during the afternoon at the main dining room by an aide who also did academic training in the evening for all boys. These job situations were viewed as being therapeutic

and not as an end unto themselves. After two months' time, it was felt that three boys could benefit from a more structured work situation available at Peabody College. They were trained in riding the bus, received food handlers' certificates and social security numbers, and proceeded to work. Each boy is still evaluated according to his performance and receives tokens accordingly. Each is responsible for the bus money for the week; each carries a lunch and eats with his fellow workers. The author is available for crisis intervention and sees the boys daily. All have an opportunity to receive fulltime employment if they reach a certain level of functioning. One boy has received the first available position; he is and has always been an excellent worker. He and the others cannot handle money well, tell time, read, count, or speak very well. Training on the ward at night takes the form of training in these skills; in addition, two boys receive speech therapy at Peabody College three times per week during their lunch breaks.

Meals

In order that meal behavior could be better controlled and modified, a dining area was constructed adjacent to a kitched off C wing, but still within the building. See Appendix E for a floor plan of the wing. Food for meals was delivered by truck from the main dining room. Tables, chairs, tablecloths, utensils, pots and pans, etc., were readily given by the dietitian who was very helpful in beginning the program and developing that part of it with which she had the most to do. Before each meal, one boy was responsible for helping an aide set up the tables and places. Tables were lined up adjacent to each

other at first, then were divided into pairs of tables around which 6 people could sit. In this manner food could be placed in bowls, and passed around to each boy. This became a very effective way to teach the boys appropriate meal behavior. Rowdiness at meals meant immediate eviction, forfeiture of the price of the meal, and return to the wing. It might be mentioned here that all boys were under a physician's care at all times.

Schedule

A schedule of the day's activities is contained in Table 2. Each morning the boys were awakened at 6 a.m. and until 7, they were responsible for cleaning themselves and their rooms. For this work they were paid a maximum of 7 tokens, 1 token for each act required (see Table 3) except for showering which paid 2. Table 3 contains the required behavior that was rewarded during the day, and it can be seen that this was similiar to that on which baseline rates were taken. (See Appendix A.) The teacher aide recorded whether or not a boy received a token each day for each act. In addition, she recorded the occurrence and amount of fines for problem behavior (See Table 4). She also recorded on a blank sheet for each boy the date, the behavior, and the antecedent and consequent events. These sheets proved invaluable for their anecdotal accounts later when data processing and the writing of this report began.

Following the early morning routine, those boys who had enough tokens proceeded to the dining room to eat. Those who did not (and this was 10 out of 14 boys on the first day) remained on the ward. On the second day, all but one boy ate breakfast. On subsequent days, all

Table 2

Daily Schedule

6:00	Wake up, make beds.
6:15	Aides check rooms.
6:30	Aides check cleanliness
7:00	Call for breakfast.
7:05	No one is allowed in.
7:30	Breakfast finished.
8:00	Boys go to work (others complete ward jobs)
8:30	Leave for school.
11:00	In building, cleanup, free time.
11:30	Call to lunch.
11:35	No one is allowed in.
11:50	Lunch finished.
11:55	Free time (TV room open - 1 token); jobs
12:30	Leave for school or work.
3:30	Return to ward, TV room open; Can rent games, no food.
4:00	Warned that time for dinner, cleanup; boys set tables.
4:30	Dinner
5:00	Brush teeth, mop rooms.
5:30	Free time, TV room open, can rent games.
6:30	Canteen - can buy foodstuffs.
8:30	Bed call
9:00	Lights out.

Table 3

Behavior to be Reinforced and Number of Tokens Paid

I. Early Morning	
A. Room	
1. Bed made	1 token
2. Bed clothes away and drawers neat	1 token
3. Washed (showered)	1 token, 2 if showered
4. Neatness - clean socks and shorts, hair combed, shirt tucked in, laces tied	1 token
5. Bathroom - lavatory clean, towel and facecloth folded, toilet flushed	1 token
6. Room - shoes away, dusted, tidy	1 token
7. No bed hopping	2 tokens
B. Breakfast	
1. General behavior	1 token
2. Brushes teeth	1 token
C. After Breakfast	
1. Begins job by self	1 token
2. Works quietly and well	1 token
3. Completes job	1 token
II. Return to Ward	
A. Before lunch	
1. Return on time	1 token
2. Cleans self	1 token
3. Plays well with self or others	1 token
4. Room clean	1 token
B. Lunch	
1. General behavior	1 token
2. Brushes teeth	1 token
3. Room neat before leaving ward	1 token

Table 3 (cont'd)

III. Afternoon	
A. Before Dinner	
1. Return on time	1 token
2. Cleans self	1 token
3. Plays well with self or others	1 token
4. Room clean	1 token
B. Dinner	
1. General behavior	1 token
2. Brushes teeth	1 token
IV. Evening	
A. Leisure Time	
1. Plays well	1 token
B. Bed	
1. Washes or showers	1 token
2. Room neat	1 token
3. In bed without problem	1 token
Other rewards:	
1. Good off-the-ward job record	1 to 5 tokens daily
2. Good on-the-ward job record	1 to 3 tokens daily
3. Helping others	1 token
4. Running errands	1 token

Table 4

Fines

Temper tantrums	1 token
Teasing	1 token
Fighting	1 token
Threatening	1 token
Swearing	1 token
Lying	1 token
Leaving with permission	1 token
Stealing	1 token
Kicking property	1 token
Entering room without permission	1 token
Spitting	1 token
Screaming	1 token
Masturbation (in public)	1 token
Homosexuality	1 token
Nose picking	1 token
Urinating on floor	1 token
Not using toilet paper	1 token
Pushing in food line	1 token
Messy at meals	1 token

Special Fines:

Breaking toys	2 tokens and cannot rent toys for two days.
Breaking doors, windows	2 tokens and not admitted to next meal and no toys, pop, or TV for day.
Refusing to give token for fine	No next meal

boys ate breakfast until day 8 when several boys tried the limits. At first, the boys remaining on the ward were left alone. Later, they were required to punch a punching bag or to work depending upon whether they were not to eat because of maladaptive behavior or because of not having enough tokens. If a boy had enough tokens and had not exhibited problem behavior, he was required to eat.

At breakfast, grace was said by one boy and the meal proceeded.

For each boy if his behavior was appropriate during the meal, he was rewarded with one token. After breakfast, all boys brushed their teeth and received one token. They all began their jobs, which they continued until 8:30 when some went to school or to a job on campus. Others remained on the ward. Later, all boys had a job as a therapeutic tool to train each one how to follow instructions and to attend for prolonged periods.

At 11:15, all boys returned, cleaned up, and received one token. Dinner began at 11:30 and all went to school or a job at 1:00. Those who attended school in the morning worked in the afternoon, and vice versa. The television room was opened before and after lunch for one token. All prices are listed in Table 5. This was repeated for the evening meal. The boys could rent toys, buy confections, and watch television in the evenings.

Table 5

Costs

Breakfast	3 tokens
Lunch	4 tokens
Dinner	5 tokens
Bed	3 tokens
TV	1 token
Pop	1 token
Gum	1 token
Games rental	1 token
Own radio	2 tokens for 3 days
Own record player and records	2 tokens for 3 days
Other radio	1 token for evening
Thursday dance	3 tokens
Afternoon in town	10 tokens
Weekend at home	10 tokens
Appointment	1 token
Visit with relative on ward	3 tokens
Big Brother	(must pay for any meal eaten off ward)

Fines

All fines were usually one token; however, meal privileges, mattresses, television privileges, dance or home privileges all could be and were removed if removal of tokens was not enough.

It was stressed, however, that rather than removal of a privilege, a boy be fined. In this way he would usually not have enough so that he could enjoy the privilege. It is an extremely easy thing to misuse the removal of privilege rule and it becomes an all or none thing while removal of tokens still offers a chance to obtain that particular privilege. At first, a timeout room was not seen as being necessary. Later, it became apparent that a room was necessary for the boys to be removed or to remove themselves from a problem situation. Many boys would take to this room and punch the bag when they felt angry at someone and it is used by aides in their attempts to anticipate difficulties and thus removing a boy from a potential catacylsm.

Rewards

Rewards included tokens for good behavior. Outside of the basic behavior expected of each boy, the teacher aides were permitted to reward any additional desirable behavior shown, e.g., politeness, helping others. Later M and M's were used for one boy in order to get him to complete small tasks. This boy was emotionally disturbed and required shaping. He has not deteriorated, but has shown minimal improvement. Cushions were available for the boys to sit on while watching TV. Toys were rented for all boys including several radios, records and record players which were purchased. Personal toys were rented only to the toy owners. All boys attended tapings of the Johnny Cash show

several times. In addition a folk singer came to sing, barbeques, fishing trips, picnics, trips to town were all arranged as backups.

Big Brothers

Seven college students and faculty members became involved with one boy each and were allowed to see each whenever they wished. These visits were at least once a week and usually twice a week. It was felt that contact with adequate adult males would help the boys develop more stable self-concepts and would provide a means of validating, on a more personal level, their views of the world. One visit per week was spent off campus and the other playing, coloring, or talking with him either in an office or on the ward. As an example of confusion, most boys referred to the big brother as "ma'am" because of their constant care by females.

Academic Training

One room was set aside for training the boys in the evenings to use a telephone, to count, to tell time, to be polite, to color, to draw, to recognize letters of the alphabet, what to do in an emergency, how to ride a bus, and to practice speaking. A tape recorder, blackboard, two real telephones, a clock, and books were purchased. Pictures of each boy were made to help them develop a better self image and to learn right-left directions and parts of the body. Plastic tokens were used as reinforcements within this system, and these could be traded for one of the regular tokens. One employee became a teacher and came to work at 11:00 and left at 7:30 p.m. During the evening, she worked with several boys. During the afternoon she supervised

5 boys who were incapable of working alone. In the latter case, when she is ill, 3 boys are capable of going to the dining room alone to stack chairs, fill salt, pepper, and sugar shakers, to mop the dining room and to set up tables. She also acts as a check for continuation of speech therapy work done at Peabody College or Clover Bottom and practice for school work. On weekends, she helps 3 older boys in learning how to wash, iron, and fold clothes, how to sew, and to cook simple things.

Ancillary Activities

Two social workers see five boys apiece one evening each week so that the boys can air problems which are bothering them. Needless to say, the first topic was how tough the token economy was. Later topics included masturbation, homosexuality (partly to shock the female workers), and home visits. All visits are handled through the social workers. The visitor must telephone the worker who contacts the ward in order to determine whether the boy has enough tokens and has behaved well. The visitor then comes to the infirmary where another check is made. She is then allowed to go to the ward.

Results

The results to be reported here are based on four months of operation for all but the two case studies which are for three months. At the time of the final writing of this report, the program has been in operation for 7 months excluding the original two weeks for baseline. It has taken a long time to code and punch and interpret all of the data available on each boy so that programs could be written to help analyze the data. It is hoped that this time is well spent so that the computer

programs and records may be reported for a greater number of observed behaviors within token programs. It is felt that too often formidable tasks of analyzing thousands of behavioral units prevents others from reporting other than case studies or anecdotal data. If we are going to be able to generalize from group to group and establish the efficacy and efficiency of token programs, such analysis and reports are necessary. These data for the present study will be available shortly both in as a group and for individuals.

Rating Scale

Interobserver reliability. Ratings on the scale in Appendix A for all 20 boys indicated an improvement from the time of the first to the time of the second rating. The data for the two testings are presented in Figure 1. Overall, these ratings were done by 2 aides each time. The interobserver reliability is not very high (.61); however, the reliabilities for some individual items are quite high. All interobserver reliability coefficients for the rating scale are found in Table 6.

For the combined overall rating, items 2, 5, and 7 show a high degree of agreement between the two aides. Items 3 and 7 show some agreement, but items 1 and 4 show little agreement. All others are significant at the .01 level. This lack of agreement on items 1 and 4 may be due to the fact that the two raters were on different shifts; one on the morning and one on the afternoon shifts. This point is especially poignant when one looks at the discrepancy between raters for the two individual ratings on item 1. Before the program,

Table 6

Interobserver Reliability Coefficients

for the Rating Scale Items

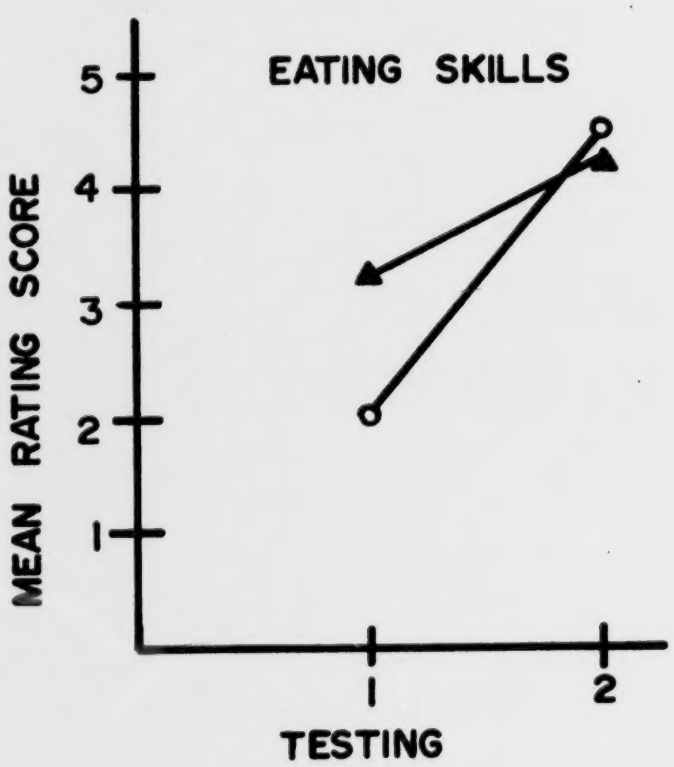
Item	Rating 1	Rating 2	Combined Overall Rating
Eating skills	.68	.32	.50
Personal Appearance	.69	.64	.67
Use of leisure time	.62	.48	.55
Peer interaction	.51	.38	.45
Working skills	.76	.90	.83
Initiative	.76	.73	.74
Attention span	.42	.58	.50

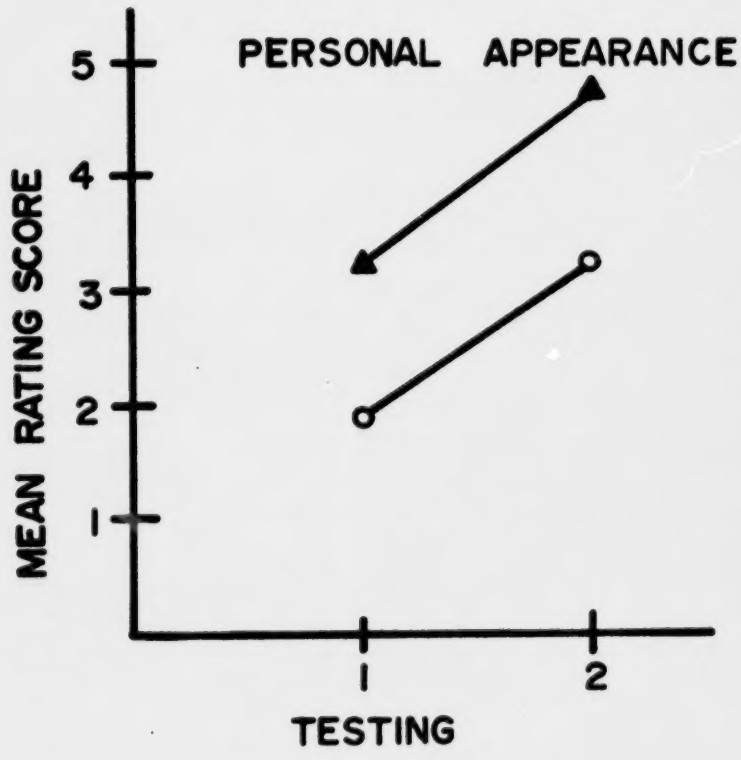
the boys acted the same at meals in the main dining room regardless of meal and shift. During the program, however, meal behavior was found to be more loose on the second shift than on the first. Consequently, first shift aides rated the boys differently than did the second shift ladies. None of the other items showed a great discrepancy between the coefficients for the two testings.

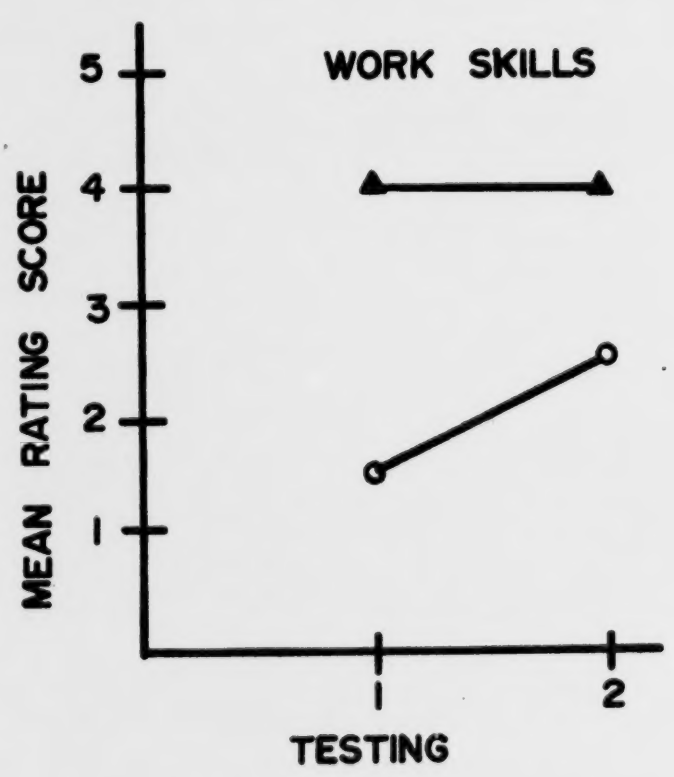
Overall Improvement

Overall improvement was seen when data for each item were combined for all 20 boys. However, by analyzing the scores for the 14 boys who were in the program for 4 months and for the 6 boys who were in it for a mean of 6 weeks, different results can be seen. The graphs in Figure 1 indicate several important trends. First, the second group improved

AIDE RATINGS FOR
BOYS PRESENT THROUGHOUT ▲——▲
AND FOR
THOSE ADMITTED DURING THE PROGRAM ○——○







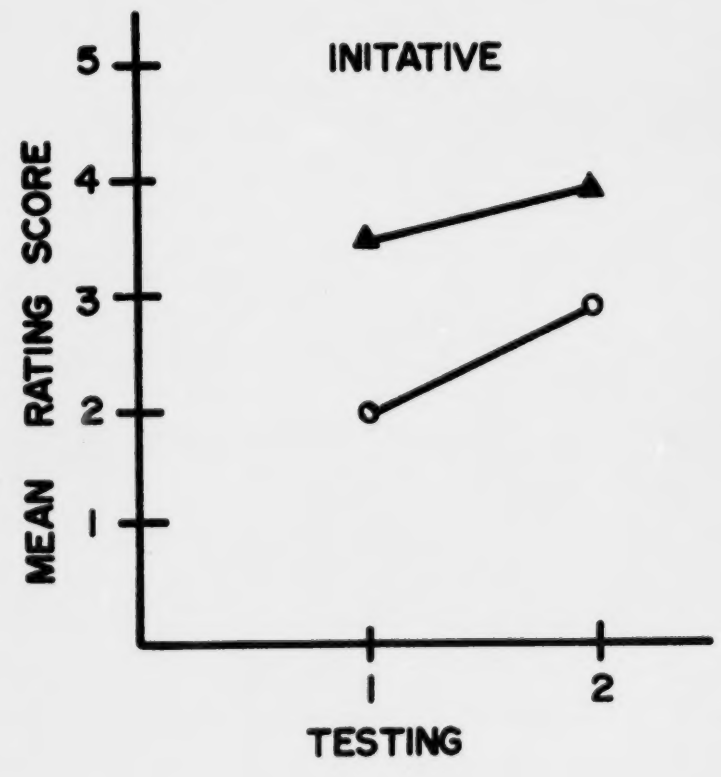
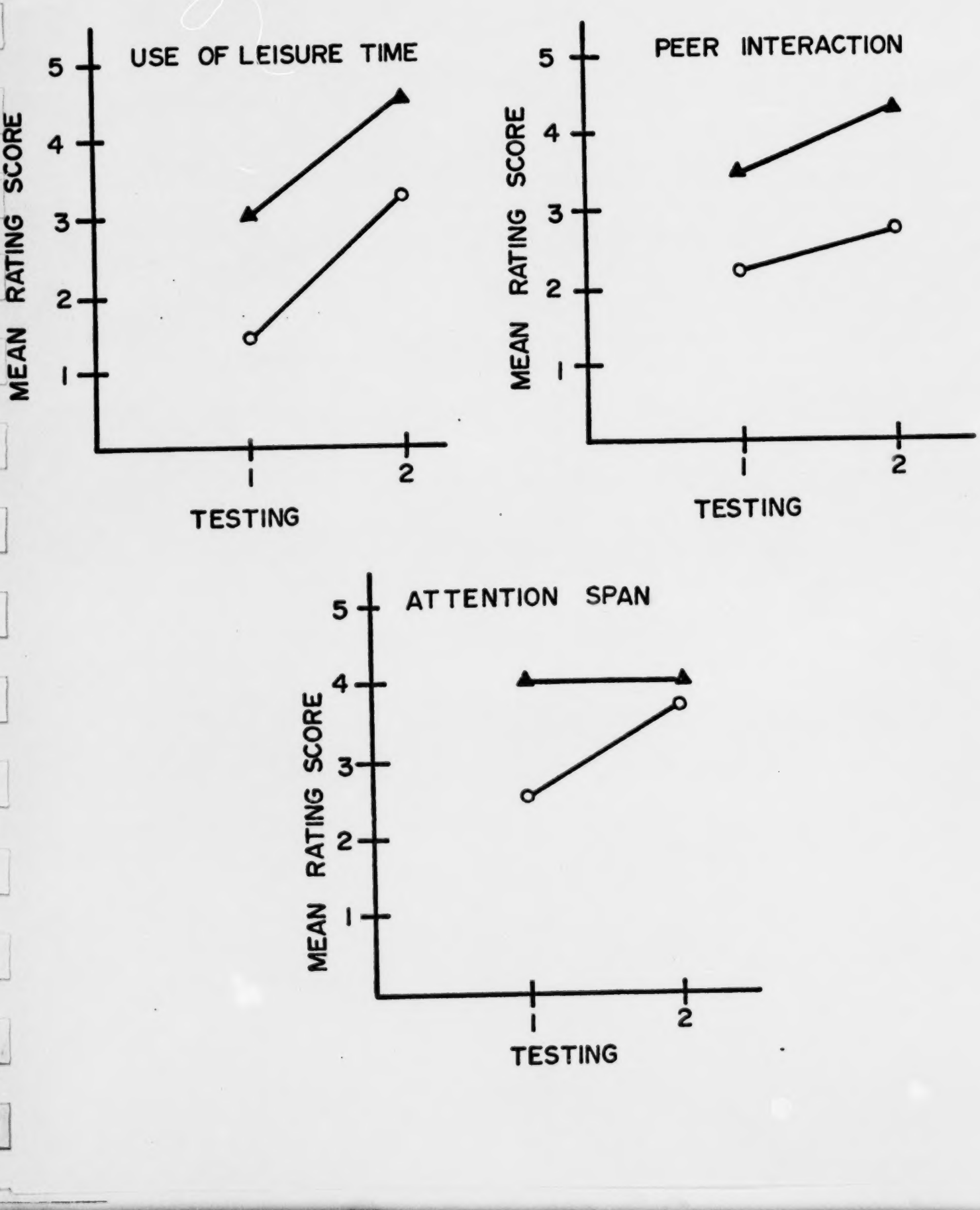


FIGURE 1

AIDE RATINGS FOR
BOYS PRESENT THROUGHOUT
AND FOR
THOSE ADMITTED DURING THE PROGRAM



for each item even while being in the program for a short period of time. The first group did not improve at all in Work Skills or in Attention Span. Both of these findings seem to be the result of a ceiling effect since the first group started at a high level and may never perform any better. The second group, on the other hand, began much lower, and, except for Eating Skills and Attention Span, did not attain the same level as the first group.

The splitting of the data into two groups like this offers an advantage because the initial performance of the 6 boys could be assumed to be at the same level as the others when they first were admitted to the present ward. For some, this was three years previous. This interpretation of the data suggests that for some of the items at least, the first group took up to three years to reach their pre-token economy level and then took 4 months to go beyond that. In this fashion a control is used and shows the relative efficacy of the token to that of the previous custodial environment.

Individual Improvement

Individually, a study of the scores of the first group indicates that those boys who needed the most training improved the most, except for the emotionally disturbed child. Three of the first group showed moderate improvement, four showed no or little improvement because they had hit the ceiling of the scale, while one boy (the emotionally disturbed one) fell back one scale point on the Personal Appearance items. Improvement ranged from 7 scale points over all items for three boys, 6 for three boys, and 4, 4, 3, and 2 for one boy each to one scale point for two boys and 0 for two boys,

both of whom were at the top of each item. Individual improvement for the second group of boys was 11, 10, 9, and 8 points for one boy each and 3 for two boys.

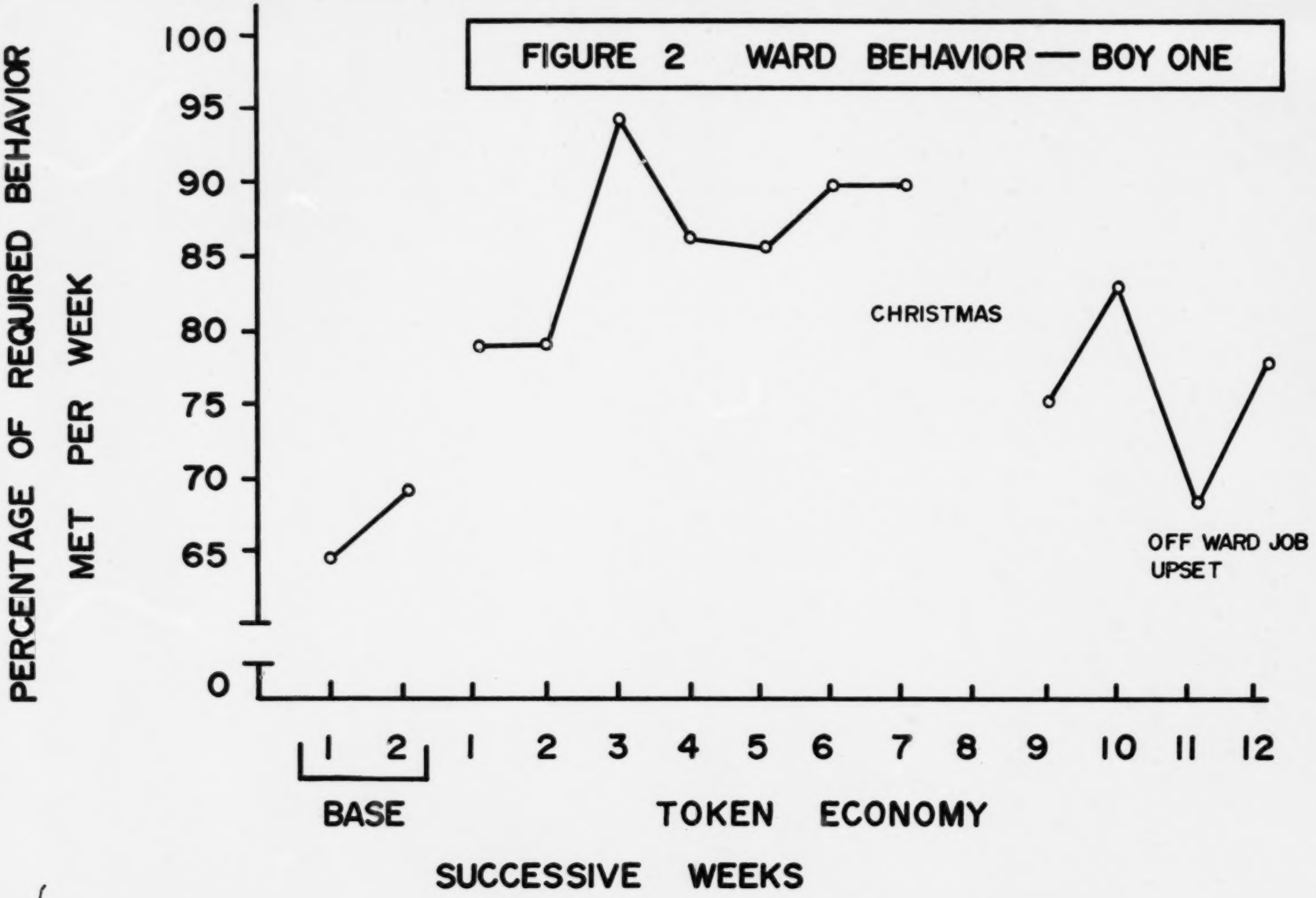
Data on Two Boys

These data are presented to serve as an example of the results. Both of these boys were selected because of their previous reputations as being severe behavior problem children. In fact, one of the prime purposes for the administrative impetus to begin the program was to see if the behavior of these two boys could be controlled, since all else had failed. The aides were unanimous in supporting this opinion of these two boys.

Boy one ward behavior. In order to analyze the data, all meal behavior categories were combined to form one category, and all other daily behavior as recorded according to Appendix B, were combined to form a ward behavior category. Admittedly such grouping may disguise other results, but it allows for ease of analysis. Also, once the program began, less behavior was monitored so that such combination may also give a more stable estimate of the boy's behavior.

The performance levels, as percentages for boy one, are presented in Figure 2. Boy one was performing at a 69.6 percent level during the second week. With the beginning of the program, his ward performance improved to a high at week 3 with minor fluctuation until weel 8 when he went home for Christmas vacation. Upon returning from the holiday, his level dropped during the first week but rose when controls again took hold. During week 11, his level dropped again, this time because of conflict at his off-the-ward job. At this time,

FIGURE 2 WARD BEHAVIOR — BOY ONE



he indicated that he had been beaten by his employer. The incident was investigated by all concerned, found to be false, and the boy was removed from the job and is now working on the ward where direct supervision can be maintained. His original dislike of the off-the-ward job was because work was involved and he went to great lengths to alleviate the situation. Now, he is working harder and more consistently and is requesting to be returned to his old job primarily because he must work harder on the ward.

Boy one meal behavior. The meal behavior of Boy one seems to be a most sensitive indicant of ward changes. His baseline level was low and rose consistently for four consecutive weeks when he left the ward for a visit home. After spending four days at home, his level fell down to his baseline level. Once again, however, it rose to an 80 percent level before he left for a week at home at Christmas. When he returned this time, his level remained high. Ordinarily, by week 6, his meal behavior would have been better, except that it was at this time that 2 new boys were admitted. One was about as aggressive as Boy one and in fact had been on this ward a year previously and had been returned to another building because the aides could not cope with his aggressive behavior. The other was docile and lacked the rudiments of social behavior. Both became targets for Boy one; the first, to bait and fight, the second, to tease and criticize. However, with Christmas coming all boys became better behaved and all but three left for visits. Boy one's meal behavior remained reasonably high after Christmas, but deteriorated when the job upset occurred.

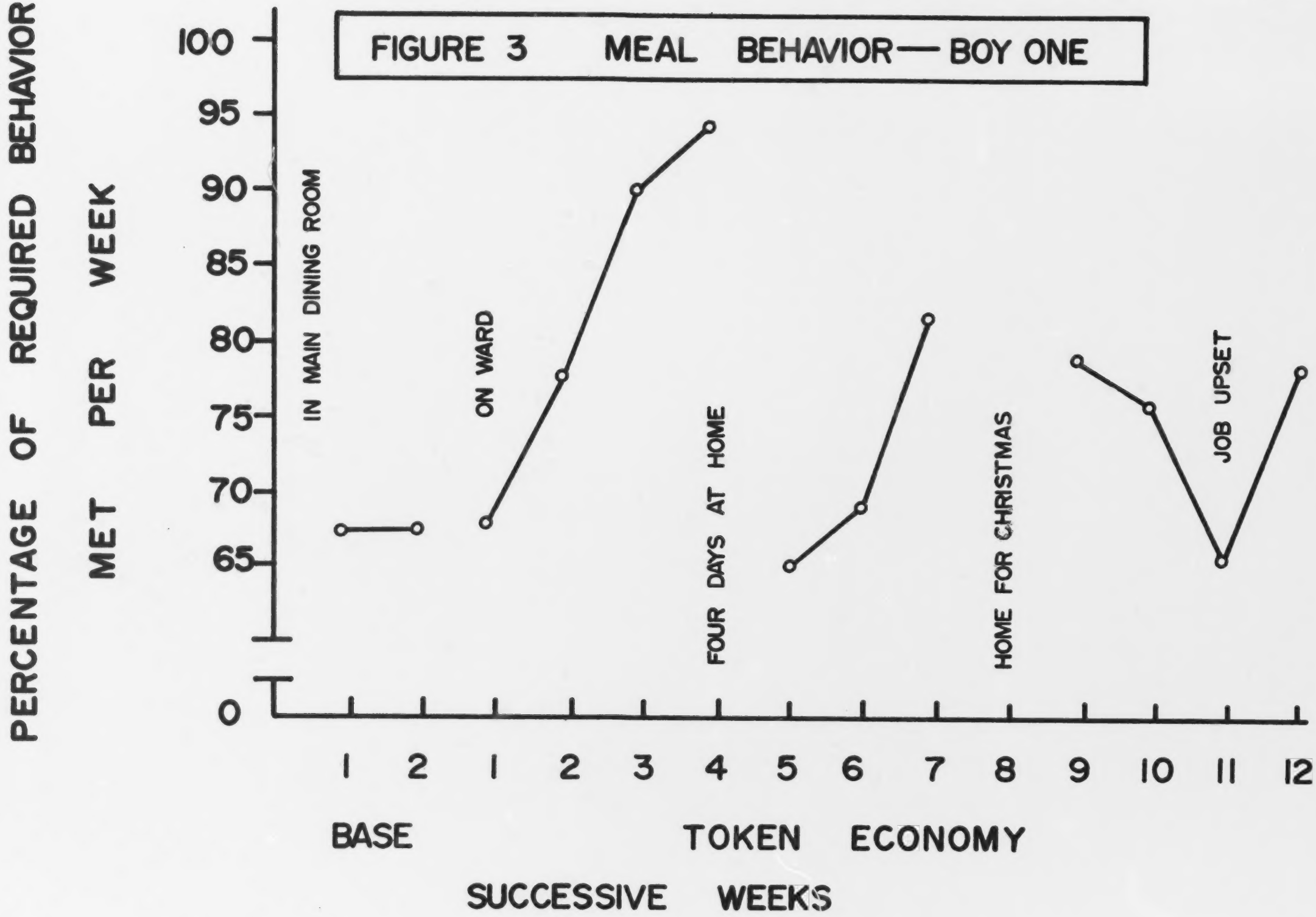


FIGURE 3 MEAL BEHAVIOR— BOY ONE

Boy one problem behavior. Figure 4 depicts the frequency of occurrence of types of problem behavior for Boy one during the baseline period of two weeks and for 12 subsequent program weeks. Five categories are used: aggression, destructive, emotional, rules, and sex. Each of those is made up of several components. Aggression includes teasing others, fighting, destruction, stealing, and kicking. Emotional includes temper tantrums, swearing, lying, screaming. Rules include leaving without permission and entering room without permission, and sex includes public masterbation and homosexual contacts.

Figure 4 contains the frequency of occurrence for four types of behavior. The sexual item was discarded because there were so few occurrences recorded. It can be seen that Boy one was extremely aggressive and exhibited many concomitant emotional responses. Similarly, he broke 10 rules during week one and 12 during week two. He exhibited few destructive responses. Compared to Boy two (Figure 7) the frequency of each type of behavior was much higher.

Once the program began, all negative behavior decreased considerably in frequency, indicating the relative efficacy of the contingencies to control undesired behavior.

Boy two ward behavior. The ward behavior of Boy two did not show the fluctuation in level that was apparent for Boy one. He showed a steady improvement over all 12 weeks.

Boy two meal behavior. As in the case of Boy one, meal behavior took a slight drop in level at the beginning of the program and also seemed to be a more sensitive indicant of ward or life

FIGURE 4 PROBLEM BEHAVIORS FOR BOY ONE

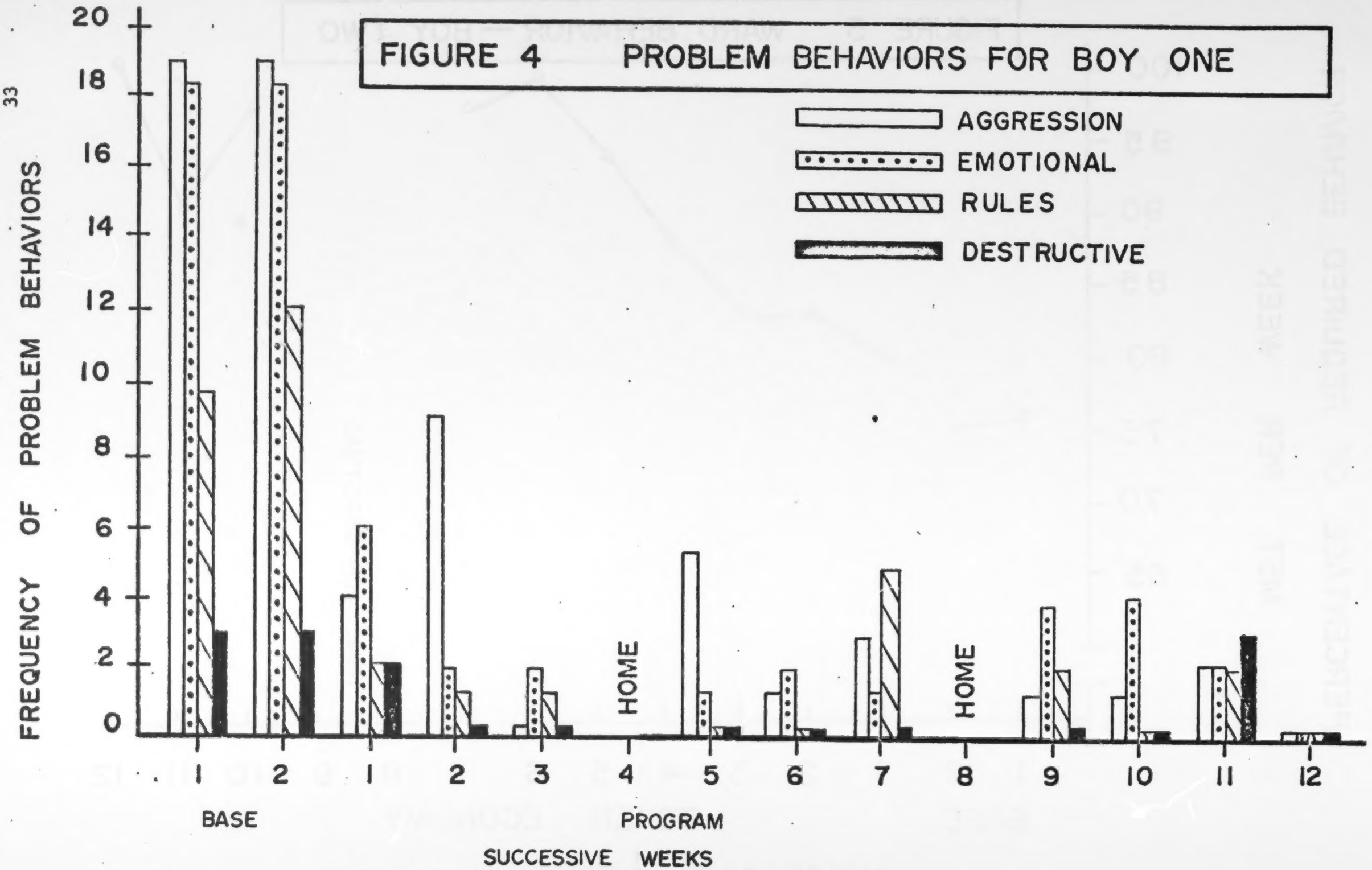


FIGURE 5 WARD BEHAVIOR — BOY TWO

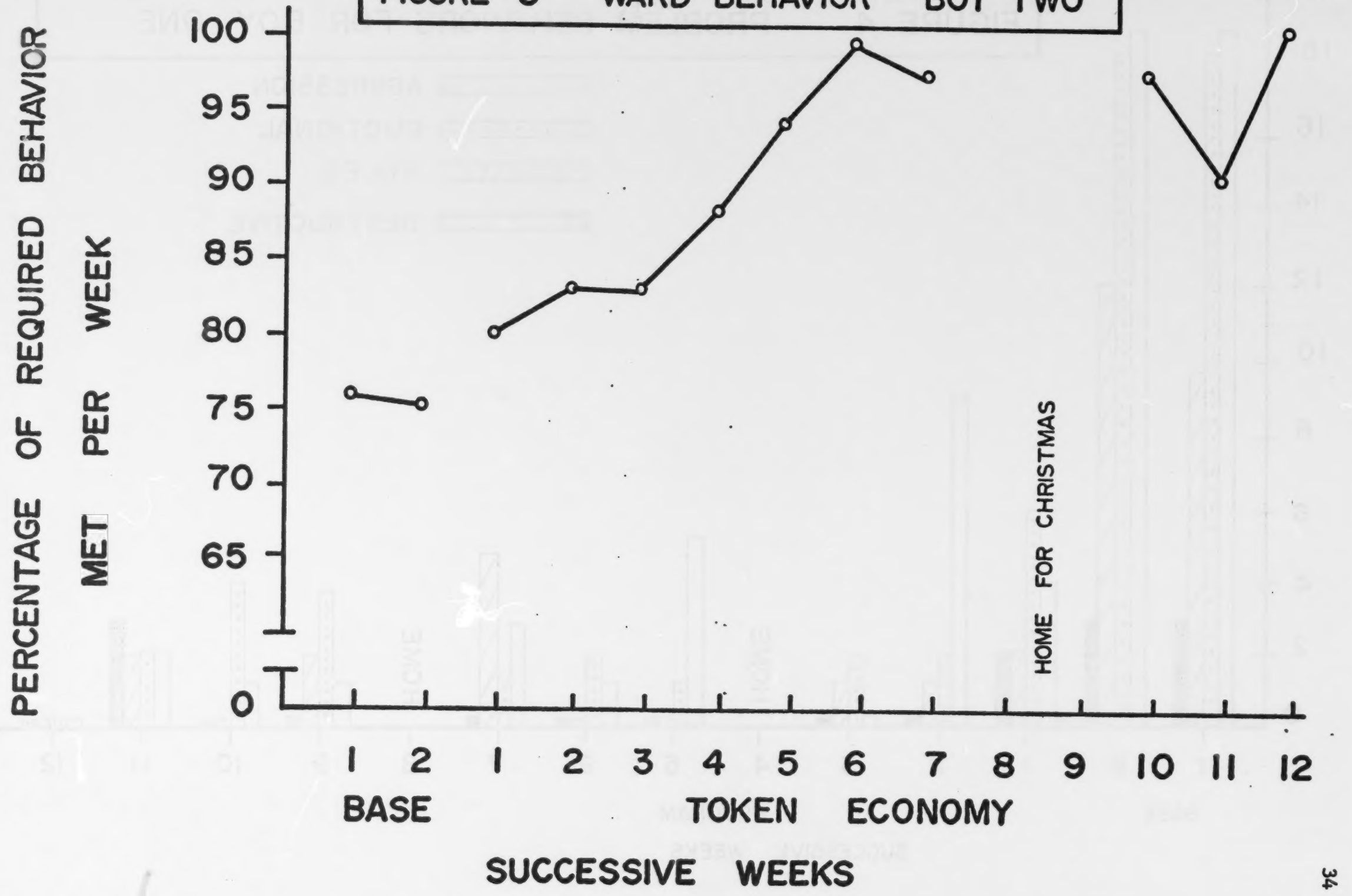
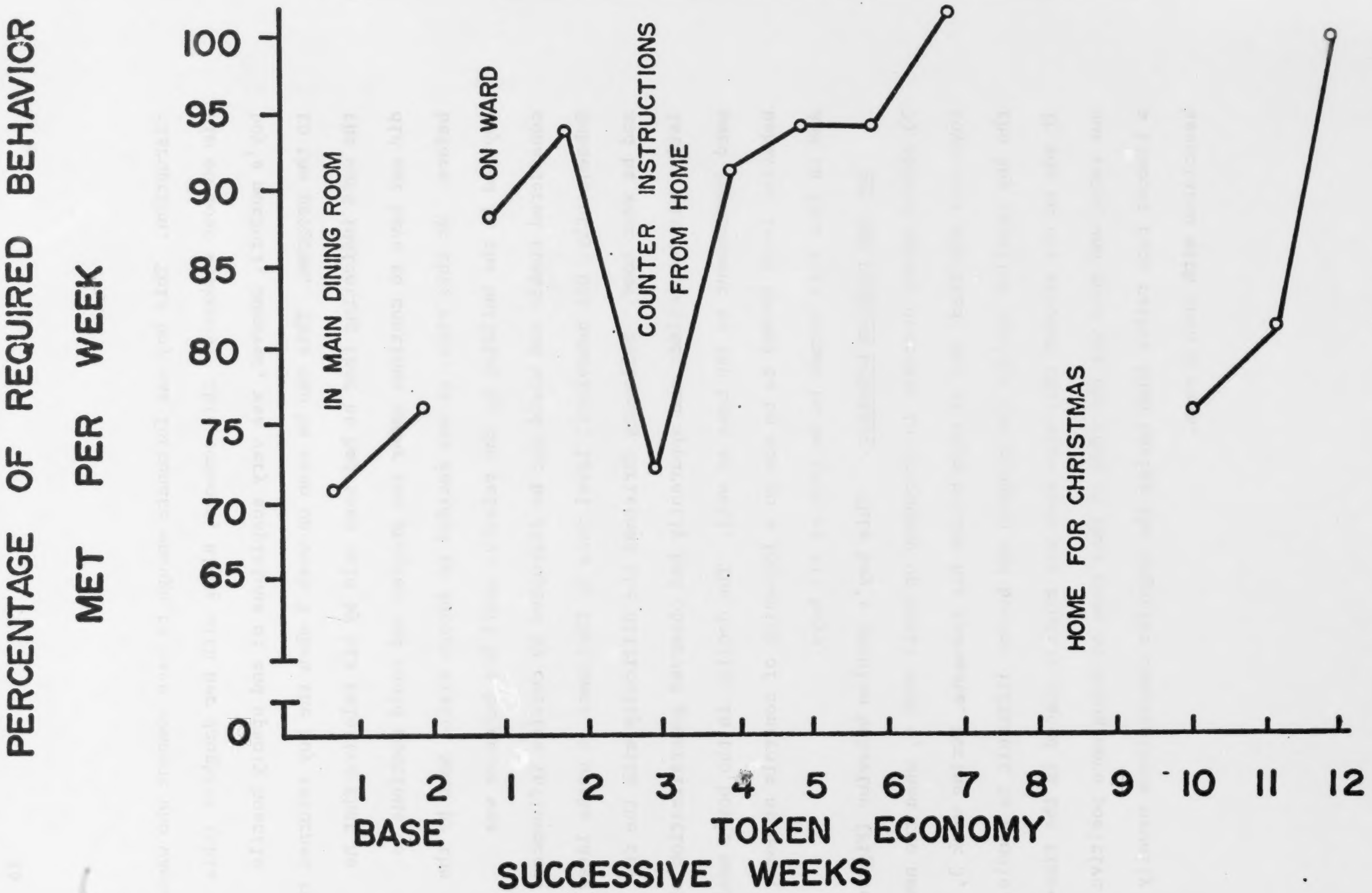


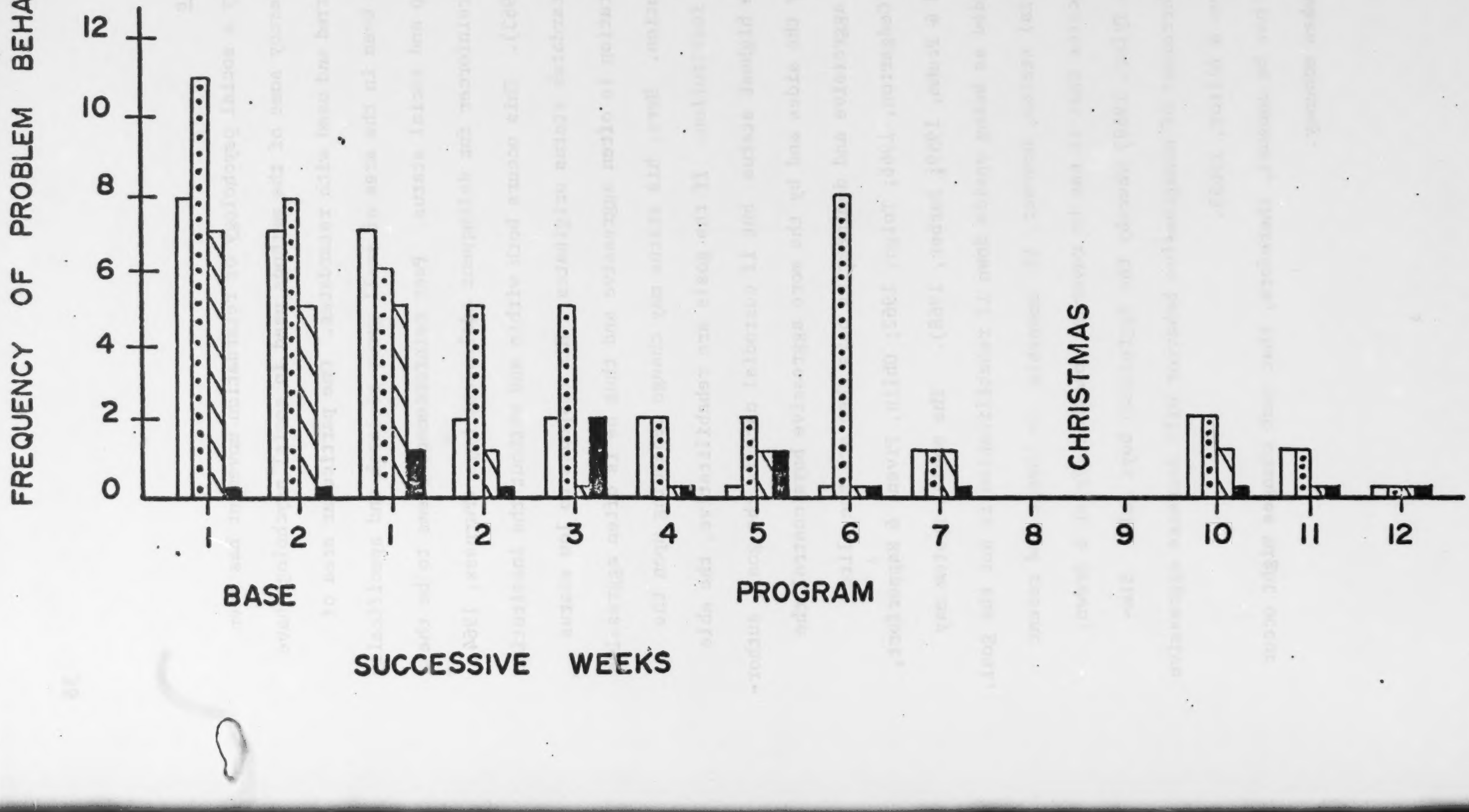
FIGURE 6 MEAL BEHAVIOR — BOY TWO



disruption. This boy was fortunate enough to have someone who wanted him on most weekends. This someone, along with her daughter (this boy's mother), however, was very suspicious of and openly hostile to the program. This can be seen on week 3 when the boy returned to the ward indicating that he had been told by his relative that he did not have to continue under the program and could continue as before. At this time, it was decided to forego visits home by the boy and in the building by the relative until his behavior was considered stable and would not be disrupted by outside influences. Subsequently, his behavioral level rose by Christmas (4 weeks later), and he went home. Following Christmas the difficulty with the relative was reconciled; she apparently had observed generalization of ward improvement to the home as well. The decline in the boy's meal behavior level seemed to be due to a loosening of controls at home, and in fact this seemes to be true of all boys.

Boy two problem behavior. This boy's problem behavior (Figure 7) showed steady decrease in frequency up until week 6, when two new boys were admitted, one of whom became his roommate. During week 3, the boy rebelled against the program and became difficult to handle. It was on his account that wire mesh was finally placed in the time-out room, and gone was the idea of this room as being more positive a timeout room rather than having the negative connotations usually associated with such a room.

FIGURE 7 PROBLEM BEHAVIORS FOR BOY TWO



Other Results

Recently a social psychology of retardation movement has been occurring whereby some of the methods used in social psychology have been transferred and used with retardates. One particular area of research has been in the area of small group research and specifically in leadership and social status. Peer reinforcement seems to be the most potent reinforcer for delinquent adolescent boys (Furness, 1964, Patterson, 1963). This occurs both within and without the institution where the retardate's status originates. His response to low status and to frustration is often aggressive and thus he is often aggressive in an institution. Here, his status may change depending upon the goals of the institution. If the goals are rehabilitative, the able will have the highest status, but if custodial care is the goal, authoritarianism by the aides and by the more aggressive boys control the others. The aggressive and domineering boys then are the elite. (MacAndrew & Cedgerton, 1966; Toigo, 1962; Ohlin, Piven, & Rapperfort, 1956; Cleland & Prehm, 1959; Farber, 1968). The social system may then be regarded as being upside down if rehabilitation is not the goal.

This social status, however, is amenable to change and recent research indicates that it can be reversed somewhat (Tyler & Brown, 1967; Brown & Tyler, 1968) whereby the aggressive boys fall. Similarly, reinforcement of nonagressive behavior will decrease aggressive behavior (Brown & Elliot, 1965).

It would not be unusual, therefore, that such changes might occur within this token economy.

Hierarchical changes. After observing the interactions of the boys and the differential treatment of the boys by aides the author was able to construct a hierarchy of roles. Table 7 contains the depiction of the changes.

Before the program began, those boys (A, B, C) who disrupted ward life most received the most attention, and in a sense, those three boys were on top, with the aides below them, because they could control the aides' behavior. The boys who were most cooperative were essentially separate from the rest of the boys because of their general high level intellectually (D, E, F). One boy (H) was at a very high level behaviorally, but low intellectually. He was used as a policeman on the wing and all boys respected him, but he was not in control. One boy (G) was separate because of his emotional disturbance and all boys viewed him as being special. The remaining boys formed the mass.

With the advent of the token economy and its egalitarianism and stress upon good and adaptive behavior as being appropriate and reinforced, changes in the relative positions of the boys occurred. At the time of the introduction of 6 new boys, 2 (Q and J) who were very aggressive, replaced (B), who joined (H) in a special status, that of working off campus, and (C), who became quite amenable to the program. (I) also worked outside and still remained separate. (D), (E), and (F) remained in the same place and the remaining new boys, (O), (P), (R), (S), joined the mass. An important difference was that vertical distance seemed not to be so great.

Table 7

Hierarchies of Interactions within C Ward

(Each letter represents one boy)

Before the Token Economy
A
H B G
C
D
E
F
I J K L M N

On the Admission of 6 New Boys (O, P, Q, R, S, T)
A Q T
H B I D E F G
J K L M N O S C P R

At Present
H B I G
D E F
J K L M N O S C P R
A Q J T

POOR ORIGINAL COPY - BEST AVAILABLE AT TIME FILMED

PAGE 40 IS NOT AVAILABLE
FOR FILMING AT THIS TIME

At present, the hierarchical structure is somewhat reversed: those boys in special positions are seen as being higher (H, B, I, and D, E, F) while the aggressive boys (A, Q, T) have fallen completely. Control is now strictly in the hands of the teacher aides. These last comments are based on the measurement of the boy's preferences for playmates, roommates, and workmates through the use of a sociometric photograph technique so that some validity is offered for these comments.

A further direction of this program has already began. A logical extension of such a reversal is to manipulate those behaviors which set boys occupying the lowest status apart. Thus reinforcement of nonaggressive behavior will lead to extinction of aggressive behavior; similarly, homosexual advances, lying, and stealing could also be extinguished so that these boys may advance up the social ladder within the ward while enhancing their chances for effective living outside the institution.

Other Findings

A questionnaire was circulated among all of the aides within the building. They were asked to indicate their opinion on how much the token economy had succeeded if it had; and if it had not, why not? Every one of the aides indicated that they had felt that the program had been of great benefit to the boys. Aides on the other wards also indicated that they would like to use an opportunity to visit and interact with the token system.

Of the 9 aides involved in the program, 8 returned questionnaires;

one aide who did not was and continues to be antagonistic to the program. All indicated that all boys had improved and stated that the program allowed them to control behavior and work with some hope of success with the boys. This result is of some importance if one considers the interests of the aides to be of some import. This result indicates that the aides view the program as being effective, and if we extend this point we might expect more productivity and better attendance from the aides and more importantly, a change in outlook towards the boys from one of failure to one of success.

Of further importance regarding the aides is the attendance at work for the program aides as compared to that of the other aides in the building, and the program aides' attendance before the program began. The attendance records of all aides in the building were examined for the four months before the program and for the four months during the program. These figures are shown in Table 8. The program aides missed a mean of 1.21 days each per month before and a mean of 1.51 during the program; if one lady's attendance record is removed, however, the latter figure drops to 1.18. She contributed half of the missing days. The other aides missed 1.02 days before the program, but jumped to 2.58 days during the program. It must be remembered that the previous four months were the summer and fall months, while the program ran through the winter, including Christmas. In fact, the aides from the other wings missed most days in the month of December. For the program aides, however, the missed days were spread out. It can be seen that for the winter, the other aides missed two and a half times as many days during the winter

TABLE 8

MEAN NUMBER OF DAYS ABSENT FROM WARD FOR REASON OTHER THAN SICKNESS

	FOUR MONTHS BEFORE PROGRAM (JULY, AUGUST, SEPTEMBER, OCTOBER, 1969)	FOUR MONTHS DURING PROGRAM (NOVEMBER, DECEMBER, JANUARY, FEBRUARY, 1969-1970)
PROGRAM AIDES	1.21	1.51 (1.18)
OTHER BUILDING AIDES	1.02	2.58

months as they did in the summer, whereas the program aides' missed days increased little. This result has important administrative implications.

An important secondary result of course was mentioned earlier and that is among the adolescent boys, a shift in power structure has occurred. Whereas before the advent of the token economy several very aggressive boys ruled the ward, controlling the aides through their destructive and aggressive behavior, presently the hierarchy has reversed. Three boys who work on a college campus several miles away, and three boys who are academically able, are seen to be the best liked within the egalitarian nature of the program. This finding too, has important implications.

Discussion

These data indicate the efficacy of a token economy with mildly retarded adolescents and the relative ease with which such a program can be established within an already functional unit and institution.

The findings seem to indicate that such a program, along with its new activities and the interest shown by others, provides some impetus to aides to attend more often, since they now believe that something can be done for their wards. In addition, these aides feel free to make suggestions, and do, thus stimulating their creativity. Finally, such a program offers an opportunity to implement behavioral skills long dormant for some aides, and also for those aides just coming out of training classes. Several of these aides have spent time in this program with the view to implementing some ideas in their buildings.

The changes in the power structure within the program are important if one feels that appropriate models are necessary for these boys on which to base their behavior. This problem of modeling has also been attacked by having college students and professional men take a boy as a little brother. Seven such pairs are now functioning, and although no evaluation is to be done of this part of the program, the effects can be seen. Boys will save tokens in order to see their Big Brothers on weekends.

It is felt that further directions in this program were necessary even though the data were incomplete. Consequently, three boys were felt to be functioning well enough to train as janitors on a college campus. They were trained to ride the bus together and can now do it individually. Each is given money to last a week. Since the author is at the college, he is continually on call to deal with crises. In addition, the token economy has recently switched from a single token to gradations in size of token roughly the equivalent in size and exactly the equivalent in value to the penny, nickel, dime, quarter, and half dollar. Each boy was tested regarding his knowledge of money and will be re-tested at intervals. All boys have shown improvement in their knowledge of money after re-testing one month after beginning the money system. It is hoped that practical experience with "money" will indicate a further efficacy of a token economy system as well as the need for a belief that aides are teachers and much teaching can be done by these teacher aides if they are shown how and have certain guidelines to follow. This is

particularly stressed since it has been shown that retardates are usually inadequately prepared for outside functioning while institutionalized (Edgerton, 1967). It may be that that hesitancy to leave which retardates exhibit may be due in part to their feeling of inadequate preparation and impending doom. Edgerton (1967) has shown that retardates have difficulty in adapting to outside functioning. This is primarily so because of inadequate job motivation, low frustration tolerance, poor money skills, little knowledge of transportation, and poor time-telling skills. This author suggests that a further reason may be given and that is the lack of knowing what to do with oneself recreationally. It takes an extremely creative normal person to occupy himself recreationally; the retardate has little creativity and less guidance, has been given almost no training, and may have home difficulty.

With this point in mind, sports equipment and baseball jerseys were purchased so that all boys could participate in games. Two teams of 10 boys apiece will be formed and will play soccer and kick ball, games in which all are active. The jerseys will be rented before each game and if a boy cannot afford it, he will not play and his team may lose. Peer pressure may then force him to change his behavior so that he can be able to play. Peer recording of behaviors, boys recording their own behavior and peer manipulation may be future directions.

Data based upon grouped frequencies for all pertinent behavior will be reported later. All data are now being coded and a program has been written to analyze those data with computer assistance. This approach to the reporting of data from token economies is being

used to break away from the tradition of reporting single case or single behavior data.

Conclusions

It may be concluded from these preliminary results that in general the token economy is effective with this population, but a rapid loss of acquired good behavior during holidays may indicate that enduring change in behavior has not been made. Inspection of later data, however, indicates that these changes are occurring where generalization occurs off the ward.

Such a system also has secondary benefits since it offers a conceptual orientation for treatment. Having a program and goals seems to increase aide productivity as well and may well generalize to other areas of an institution.

Future directions could also be in the form of utilizing schedules of reinforcement whereby rewards are only given after a period of time or given for several and not one behavior. It may also be possible to expand the present program to include adolescent girls in particular and to use presently-trained aides to help train others.

References

Atthowe, J. M. Jr., & Krasner, L. Preliminary report on the application of contingent reinforcement procedures (token economy) on a "chronic" psychiatric ward. Journal of Abnormal Psychology, 1968, 73, 37-43.

Ayllon, T., & Azrin, N. The token economy: A motivational system for therapy and rehabilitation. New York: Appleton-Century-Crofts, 1968.

Ball, T. S. The establishment and administration of operant conditioning programs in a state hospital for the retarded. California Mental Health Research Symposium No. 4, 1969.

Bensberg, G. J. Teaching the mentally retarded -- A handbook for ward personnel. Atlanta: Southern Regional Education Board, 1965.

Brown, P., & Elliot, R. Control of aggression in a nursery school class. Journal of Experimental Child Psychology, 1965, 2, 103-107.

Brown, G. D., & Tyler, V. O. Time out from reinforcement: A technique for dethroning the "duke" of an institutionalized delinquent group. Journal of Child Psychology and Psychiatry, 1968, 9, 203-211.

Burchard, J. D. Systematic socialization: A programmed environment for the habilitation of antisocial retardates. Psychological Record, 1967, 17, 461-476.

Cleland, C. C., & Peck, R. F. Psychological determinants of tenure in institutional personnel. American Journal of Mental Deficiency, 1959, 63, 876-888.

Edgerton, R. B. The cloak of competence. Los Angeles: University of California Press, 1967.

Farber, B. Mental retardation: Its social context and social consequences. Boston: Houghton Mifflin, 1968.

Ferster, C. B., & DeMyer, M. The development of performance in autistic children in an automatically controlled environment. Journal of Chronic Diseases, 1961, 13, 312-345.

Furness, J. Peer reinforcement of behaviors in an institution for delinquent girls. Unpublished M. A. thesis, Oregon State University, 1964.

Larsen, L. A., & Bricker, W. A. A manual for parents and teachers of severely and moderately retarded children. IMRID Monograph, 1968, Vol. V, No. 22.

MacAndrew, C., & Edgerton, R. On the possibility of friendship. American Journal of Mental Deficiency, 1966, 70, 612-621.

Meicherbaum, D. H., Bowlers, K. S., & Ross, R. R. Modification of classroom behavior of institutionalized female adolescent offenders. Behavior Research and Therapy, 1968, 6, 343-353.

Musick, J. K., & Luckey, R. F. A token economy for moderately and severely retarded. Mental Retardation, 1970, 8, 35-36.

Ohlin, L., Piven, H., & Pappenfort, D. M. Major dilemmas of the social worker in probation and parole. National Probation and Parole Association Journal, 1950, 2, 211-225.

Patterson, G. R. Reinforcement of aggression by the peer group and the reinforcement of delinquent behavior by a delinquent peer culture. Unpublished manuscript, 1963.

Patterson, G. R., & Brodsky, G. A behavior modification programme for a child with multiple problem behaviors. Journal of Child Psychology and Psychiatry, 1966, 7, 277-295.

Patterson, G. R., Jones, R., Whittier, J., & Wright, M. A. A behavior modification technique for the hyperactive child. Behavior Research and Therapy, 1965, 2, 217-226.

Phillips, R. Achievement place: Token reinforcement procedures in a home-style rehabilitation setting for "pre-delinquent" boys. Journal of Applied Behavior Analysis, 1968, 1, 213-223.

Ray, E. T. The use of operant conditioning with disturbed adolescent retarded boys. Paper presented at the 20th Mental Hospital Institute, Washington, 1968.

Roberts, C. L., & Perry, R. M. A token economy. Mental Retardation, 1970, 8, 15-18.

Scheerenberger, R. C. (Editor). Mental retardation, selected conference papers. Springfield, Ill.: Illinios Department of Mental Health, 1969.

Shelton, J. T. Habilitation of disturbed adolescent male retardates. Mental Retardation, 1968, 6, 30-33.

Toigo, R. Illegitimate and legitimate cultures in a training school for girls. Proceedings of the Rip Van Winkle Clinic, 1962, 3, 3-29.

Tyler, V. O., & Brown, G. D. The use of swift, brief isolation as a group control devoce for institutionalized delinquents. Behavior Research and Therapy, 1967, 5, 1-9.

Werry, J. S., McQueen, M. M., Kuypers, D. S., & Evans, M. B. A token economy in a residential treatment center for emotionally disturbed

children. Paper presented at the Orthopsychiatric Association meeting, New York, 1969.

Appendix A

Rating of Adolescents

Instructions -- Rate each boy on these skills. Do not talk to other attendants about how they scored the boys.

	POOR				GOOD
1. Eating Skills (not messy, eats all, etc.)	1	2	3	4	5
2. Personal Appearance (neat, clothes pressed)	1	2	3	4	5
3. Use of Leisure Time (aimless, without help)	1	2	3	4	5
4. Peer Interaction (no fights, talks pleasantly)	1	2	3	4	5
5. Work Skills (diligent, succeeds)	1	2	3	4	5
6. Initiative (thinks of things to do)	1	2	3	4	5
7. Attention Span	1	2	3	4	5

Appendix B

Daily Routine Observation

Instructions -- Make a check if done and a cross if not done for each behavior.

Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I. Early Morning														
A. Room														
1. up on time														
2. bed made														
3. bed clothes away														
4. showered (washed)														
5. clothes neat														
6. hair combed														
7. deodorant														
8. sink cleaned (dry)														
9. teeth brushed														
10. towel folded														
11. needs urging														
12. needs help														
13. toilet flushed														
14. used toilet paper														
15. urinates in toilet														
16.														
17.														
18.														
B. Breakfast														
1. on time														
2. gets food properly														
3. not boisterous														
4. not messy														
5. waits for all														
6. polite														
7. needs urging														
8. needs help														
9.														
10.														
11.														

Appendix B (cont'd)

Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14
II. Late Morning														
A. School														
1. on time														
2. applies self														
3. doodles														
4. talks to others														
5. fidgits														
6. succeeds														
7. polite														
8. raises hand														
9. can work alone														
10. listens														
11. needs help														
12. needs urging														
13.														
14.														
15.														
OR														
B. Work														
1. on time														
2. understand instructions														
3. can be left alone														
4. applies self														
5. gets job done														
6. does job well														
7. polite														
8. needs urging														
9. needs help														
10.														
11.														
12.														
III. Early Afternoon														
A. Return														
1. returns on time														
2. washes (shower)														
3. plays by self														
4. plays well with others														
5. watches TV														
6. does work (specify)														
7. demands attention														
8. aimless														
9.														
10.														

Appendix B (cont'd)

Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14
B. Lunch														
1. neat														
2. clean														
3. on time														
4. gets food properly														
5. not boisterous														
6. not messy														
7. polite														
8. needs urging														
9. needs help														
10.														
11.														
12.														
C. School														
1. on time														
2. applies self														
3. doodles														
4. talks to others														
5. fidgets														
6. succeeds														
7. polite														
8. raises hand														
9. can work alone														
10. listens														
11. needs urging														
12. needs help														
13.														
14.														
15.														
OR														
D. Work														
1. on time														
2. understands instructions														
3. can be left alone														
4. applies self														
5. gets job done														
6. does job well														
7. polite														
8. needs urging														
9. needs help														
10.														
11.														
12.														

Appendix B (cont'd)

Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14
IV. Late Afternoon														
A. Return														
1. can return by self														
2. returns directly														
3. reasonably clean														
4. washes (showers)														
5. neat														
6. plays well with self														
7. plays well with others														
8. watches TV														
9. does work (specify)														
10. demands attention														
11. aimless														
12.														
13.														
14.														
B. Dinner														
1. neat														
2. clean														
3. on time														
4. gets food properly														
5. not boisterous														
6. not messy														
7. polite														
8. needs urging														
9. needs help														
10.														
11.														
12.														
V. Evening														
A. Return														
1. returns by self														
2. returns directly														
3. plays well with self														
4. plays well with others														
5. watches TV														
6. does work (specify)														
7. demands attention														
8. aimless														
9.														
10.														
11.														

Appendix B (cont'd)

Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14
B. Bed Behavior														
1. begins by self														
2. washes (showers)														
3. brushes teeth														
4. changes well (clothes away)														
5. bathroom tidy														
6. not boisterous														
7. lights out on time														
8. needs urging														
9. needs help														
10. problem getting to sleep														
11.														
12.														
13.														
C. Night Hours														
1. wets in bed														
2. cries														
3. thrashes														
4. wants attention														
5.														
6.														
7.														

Appendix C

Problem Behaviors

Instructions -- Please check each time behavior occurs. Give time and make little note for reason behavior occurred on the attached sheet.

Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Temper tantrum														
2. Selfishness														
3. Peculiar Thinking														
4. Teasing Others														
5. Fighting														
6. Threatening Others (Residents or Attendants)														
7. Swearing														
8. Lying														
9. Attention Seeking														
10. Leaving without permission														
11. Rocking														
12. Hyperactivity														
13. Peculiar Noises (Whimpering, snorts)														
14. Stealing														
15. Kicking Property														
16. Begging														
17. Entering Room Without Permission														
18. Talking A Great Deal														
19. Crying Easily														
20. Twirling Pencil or Stick														
21. Spitting														
22. Laughing Inappropriately														
23. On Walk, Runs Away														
24. Screaming														
25. Talking (Too Much)														
26. Withdrawing														
27. Masturbation (In Public)														
28. Homosexuality														
29. Nose Picking														
30.														
31.														
32.														

Appendix D

Name:_____ Job:_____

Date:_____ Rater:_____

Instructions -- Please circle one letter for each item. Rate on that day's performance only.

1. Goes to work. Arrives on time.

A	B
No	Yes

2. Amount of supervision required to do job -- not supervision to and from job or getting along with others -- just supervision required to do a task.

A	B	C
Total or very frequent close supervision.	Average-definitely supervised but can be left alone.	Minimal-works independently.

3. Iniative shown -- does Resident go to job and begin it herself and find another appropriate new job when finished.

A	B	C
Has to be led to each job. Runs away or leaves.	Average. Told what to do.	Starts job and occasionally finds new things to do.

4. Getting along with other Residents and Staff.

A	B	C
Excessively sassy.	Gets along all right.	Pleasant - can even take some stress.

5. The degree to which a boy tries to do a good job -- a measure of effort -- not of output. Each boy judged against amount of effort she herself can make.

A	B	C
Makes no effort.	Average for this boy.	Tries very hard to do well.

6. Actual productiveness -- a measure of how much a Resident accomplishes, not how hard she tries.

A	B	C
Almost nothing Accomplished.	Average amount done.	Gets a great deal of work done.

Appendix E

FLOOR PLAN OF TOKEN ECONOMY WARD AT CLOVER BOTTOM